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Extending AMY Shear Viscosity Calculations to Finite Baryon Chemical Potentials

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Transport coefficients, such as viscosity, can be calculated theoretically in weakly coupled quantum field theory, and present interesting information about hydrodynamic models of heavy-ion collisions. We present the results for shear viscosity calculations at leading-log in QCD in a regime of high baryon density, where the chemical potentials are greater than the temperature, which is a very unknown region of the QCD phase diagram. For that, we extend the results obtained by Arnold, Moore, and Yaffe. Such conditions of temperature and baryon density are found in medium-energy heavy-ion collisions and in the nuclei of neutron star mergers.

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